L. A. E. C. BYRNE.

PADLOCK.

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936,863.

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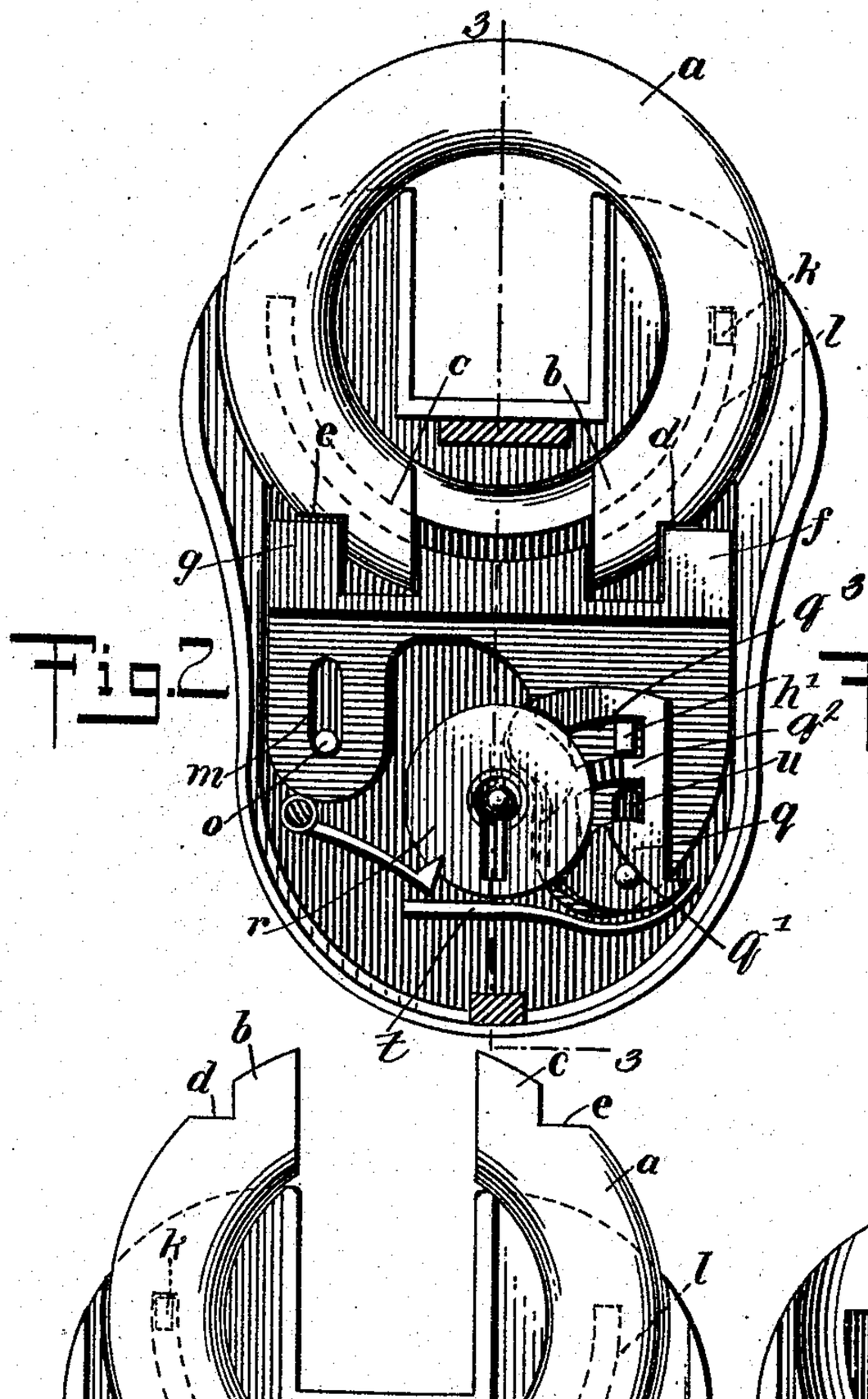

Fig. 2

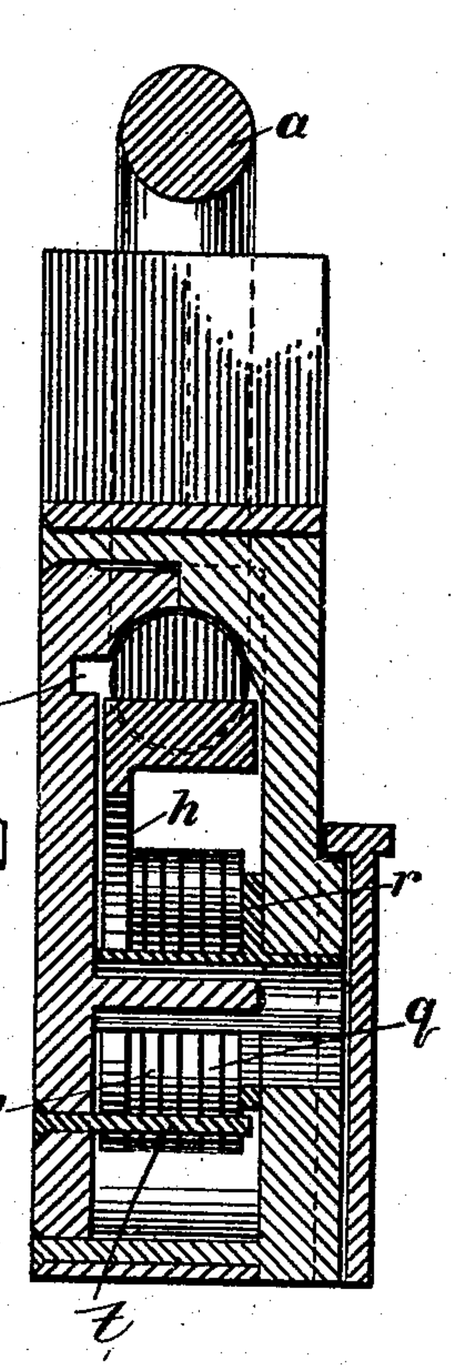

Fig. 3

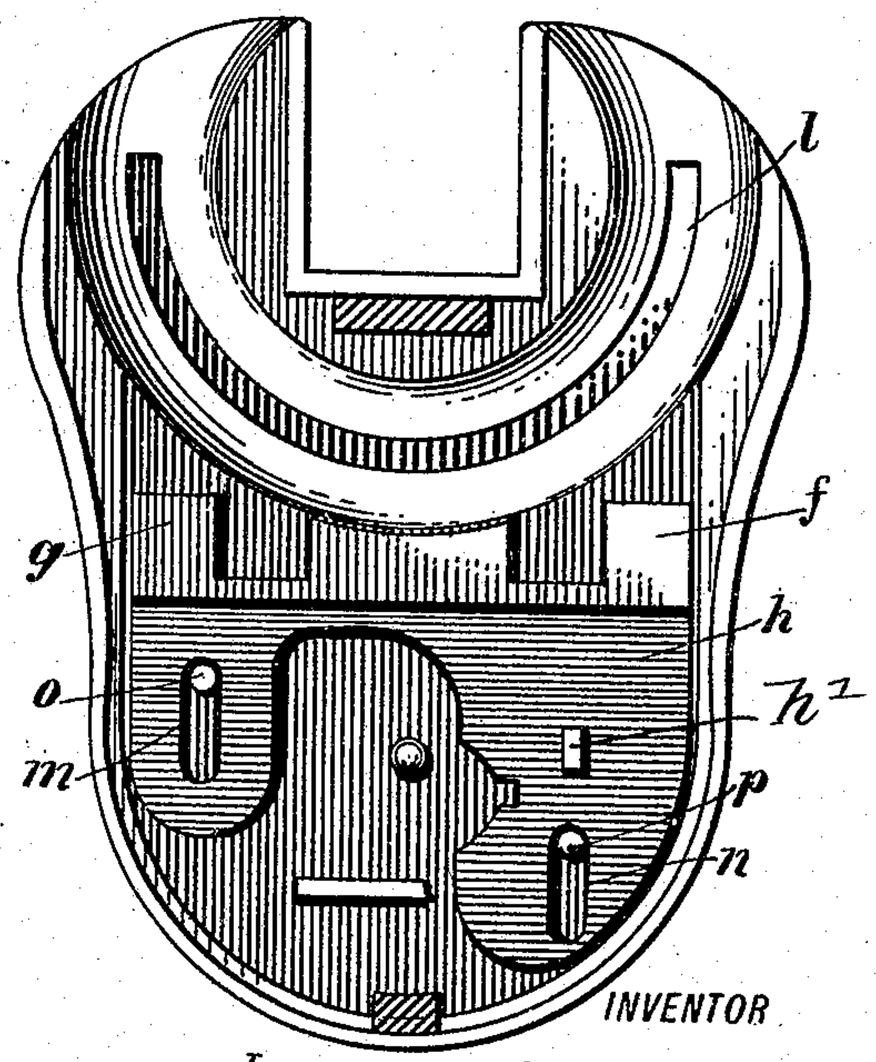

Fig. 4

WITNESSES

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PADLOCK.

936,863. Specification of Letters Patent. **Patented Oct. 12, 1909.**

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To all whom it may concern:

Be it known that I, LAWRENCE ANDREW EDMUND CORLEY BYRNE, a subject of the King of Great Britain, and a resident of Lahore, Punjab, India, have invented a new and useful Improvement in Padlocks, of which the following is a specification.

This invention relates to padlocks, and more particularly to a device of this kind comprising a casing, a rotatable shackle mounted to project partly from the casing, a slidable member, which in a predetermined position holds the shackle against movement, and key-operable tumbler levers controlling the slidable member.

The object of the invention is to provide a simple, inexpensive and durable padlock which is inexpensive to manufacture and easy of operation, and which is so constructed that it is difficult to force the lock or to pick the same.

The invention consists in the construction and combination of parts to be more fully set forth hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a front elevation of an embodiment of my invention, the front of the casing being removed and the padlock being shown in the "open" position; Fig. 2 is a similar view, the padlock being shown in the locked or "closed" position; Fig. 3 is a cross section on the line 3—3 of Fig. 2; and Fig. 4 is a front elevation of the device showing the front of the casing, the shackle and the tumbler levers removed.

Referring to the drawings *a* is the shackle which is circular in configuration and at a portion of its circumference is formed with a gap as shown, the interval between the free ends being sufficient to permit of the shackle being passed over objects it is desired to secure. The ends *b*, *c*, of the shackle *a* are formed with notches *d*, *e*, adapted when the shackle is in the closed position to receive and to co-act with extensions *f*, *g*, formed upon a sliding plate *h*, whereby the shackle is maintained against movement and the padlock is kept locked. In order that the extent of its movement may be limited the shackle *a* is provided with a fixed pin or lug *k* adapted to be traveled in a groove *l* in the internal surface of the casing of the padlock.

The sliding plate *h* is adapted to be moved into and out of engagement with the free ends *b*, *c*, of the shackle *a* in a direction longitudinally of the padlock by means of the engagement therewith of one or more wards of a key and said plate is provided with slots *m*, *n*, with which pins *o*, *p*, rigidly attached to the padlock casing engage and thus prevent tilting or rocking of said sliding plate *h* relatively to the padlock casing.

Any desired number of tumbler levers *q* may be provided in accordance with requirements and the keyhole is provided with an internal screen *r* thereby preventing the insertion for fraudulent purposes of any instrument into the padlock.

The tumbler levers have cutaway parts *q'* and q^3 connected by partitions q^2 having openings therethrough, which in predetermined positions of all the levers are adapted to register, to permit the movement therethrough of an arm *h'* of the sliding plate *h* so that the latter can be operated by the key used in connection with the lock. The tumbler levers are controlled by a suitable spring member *t*. The partitions q^2 of the various levers have the openings therethrough at different points so that the tumbler levers do not bodily register when the openings through the partitions thereof register. It will be understood that the wards of the key are so formed that they properly position the levers to cause the openings in the partitions to register so that the movement of the key not only adjusts the tumbler levers, but at the same time moves the sliding plate into or out of engagement with the shackle.

The normal position of the parts is such that the two free ends *b*, *c*, of the shackle *a* are engaged by correspondingly formed recesses and the extensions *f*, *g*, on the upper end of the sliding plate *h*, which is therefore in its uppermost position. When it is desired to unlock or open the padlock the key is inserted and turned so as to lower the sliding plate *h* from engagement with the free ends *b*, *c*, of the shackle *a*. The shackle *a* is then given a movement so as to bring the two free ends *b*, *c*, thereof out of padlock casing and into a position to permit the space or gap in the shackle to be passed over whatever object it may be desired to secure. To close the padlock the shackle *a* is moved

back to its initial position with its free ends *b*, *c*, within the padlock casing and the key is turned so as to cause the sliding plate *h* to be moved upwardly back into engagement with said free ends *b*, *c*. The padlock casing is preferably formed of a metal casting having a cover plate brazed or otherwise suitably secured thereto. It will thus be seen that since the shackle curves inside the lock enormous resistance is offered to any pressure applied on account not only of said curvature but also owing to the body of the lock being cast in one solid piece with the exception of the front plate. It would be necessary to break away a large portion of the body or casing before the shackle when once in the locked position, could be separated by force from the body of the padlock.

The front plate of the lock is preferably brazed in and is strengthened with two lugs or projections which are riveted in position at the top and bottom of the lock respectively through corresponding apertures in the back plate. If a crow bar or other instrument be inserted in the shackle of a lock constructed as described with the view of forcing it open the resistance would be increased inasmuch as the point of the crow bar would tend to press back the mass of metal on the top of the lock that must of necessity be torn away before the shackle could be released from the body. By the provision of a block adapted to slide longitudinally of the padlock and to engage the shackle a very strong and secure means of fastening is obtained. The number of tumbler levers and the position of each can of course be varied so that no two locks are alike.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed I declare that what I claim is:—

1. A padlock, comprising a casing, a rotatable circular shackle having a gap, and a key operated slidable locking member for the shackle, said member having means for entering the gap of the shackle and engaging the shackle at each side of the said gap.

2. A padlock, comprising a casing having a curved guideway, a rotatable shackle movably mounted in said guideway and partly projecting from said casing, said shackle having a lug, said casing having a guideway with which the lug of the shackle engages to limit the movement of said shackle, a slidable member serving in a predetermined position to hold said shackle against rotation, and key-operable tumbler levers controlling said member.

3. A padlock, comprising a casing, a rotatable shackle, a slidable member serving in a predetermined position to hold said shackle against rotation, and key-operable tumbler levers having cutaway parts adapted to register in predetermined positions of said levers, said slidable member having a part adapted to coöperate with said levers, whereby in said predetermined positions of said levers said part is free to move with said slidable member.

4. A padlock, comprising a casing, a rotatable shackle, a slidable member serving, in a predetermined position, to hold said shackle against rotation, said member having slots, said casing having pins in said slots and serving to guide said member, and key-operable tumbler levers having cutaway parts, said slidable member having an arm controlled by said levers, whereby, in predetermined positions of said levers, said arm can move in said cutaway parts.

5. A padlock, comprising a casing, a rotatable shackle, a slidable member serving in a predetermined position, to hold said shackle against rotation, means for guiding said member within said casing, key-operable tumbler levers, each having a plurality of cutaway parts having a partition therebetween, said partitions having openings therethrough adapted to register in predetermined positions of said levers, said member having an arm arranged to pass through said openings of said partitions when said openings register, whereby said slidable member can move toward or away from said shackle when said levers are in the predetermined positions above-mentioned, and a spring controlling said levers.

6. A padlock, comprising a casing, a rotatable shackle having a gap, and adjacent to the ends of said gap, notches, and a slidable member having extensions adapted to engage in said notches and having a part adapted to engage within said gap in a predetermined position of said slidable member, said slidable member being key-controllable.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

LAWRENCE A. E. CORLEY BYRNE.

Witnesses:
RALPH S. D'ARCY,
C. O'BRIAN.